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ABSTRACT

Students must have uninterrupted periods of time to process information, to reflect on what has been said, observed, or done, and to consider what their personal responses will be. After at least three seconds of uninterrupted silence, a significant number of positive outcomes occur for students and teachers. Students are more effective in completing cognitive tasks in particular situations. The teacher's job is to manage and guide what occurs prior to and immediately following each period of silence so that the processing that needs to occur is completed. Eight categories of periods of silence name the place they occur or the primary function the silences perform during conversations and discussions: (1) post-teacher question wait-time; (2) within-student's response pause-time; (3) post-student's response wait-time; (4) student pause-time; (5) teacher pause-time; (6) within-teacher presentation pause-time; (7) student task-completion work-time; and (8) impact pause-time. Contians 8 references. (Author/CK)

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by
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Information processing involves multiple cognitive tasks that take time. Students must have uninterrupted periods of time to process information; reflect on what has been said, observed, or done; and consider what their personal responses will be.

The Concepts of "Wait-Time and "Think-Time." The concept of "wait-time" as an instructional variable was invented by Mary Budd Rowe (1972). The "wait-time" periods she found—periods of silence that followed teacher questions and students' completed responses—rarely lasted more than 1.5 seconds in typical classrooms. She discovered, however, that when these periods of silence lasted at least 3 seconds, many positive things happened to students' and teachers' behaviors and attitudes. To attain these benefits, teachers were urged to "wait" in silence for 3 or more seconds after their questions, and after students completed their responses (Casteel and Stahl, 1973; Rowe 1972; Stahl 1990; Tobin 1987). For example, when students are given 3 or more seconds of undisturbed "wait-time," there are certain positive outcomes:

- The length and correctness of their responses increase.
- The number of their "I don't know" and no answer responses decreases.
- The number of volunteered, appropriate answers by larger numbers of students greatly increases.
- The scores of students on academic achievement tests tend to increase.

When teachers wait patiently in silence for 3 or more seconds at appropriate places, positive changes in their own teacher behaviors also occur:

- Their questioning strategies tend to be more varied and flexible.
- They decrease the quantity and increase the quality and variety of their questions.
- They ask additional questions that require more complex information processing and higher-level thinking on the part of students.

Recently, Stahl (1985) constructed the concept of "think-time," defined as a distinct period of uninterrupted silence by the teacher and all students so that they both can complete appropriate information processing tasks, feelings, oral responses, and actions. The label "think-time" is preferred over "wait-time" because of three reasons (Stahl 1990):

- It names the primary academic purpose and activity of this period of silence—to allow students and the teacher to complete on-task thinking.
- There are numerous places where periods of silence are as important as those "wait-time periods" reported in the research literature.
- There is at least one exception, labeled "impact pause-time," that allows for periods of less than 3 seconds of uninterrupted silence.

The convention is to use 3 seconds as the minimum time period because this time length represents a significant break-through (or threshold) point: after at least 3 seconds, a significant number of very positive things happen to students and teachers. The concern here is not that 2.9 seconds is bad, while 3 seconds is good, and 5.3 seconds of silence is even better. The concern is to provide the period of time that will most effectively assist nearly every student to complete the cognitive tasks needed in the particular situation. The teacher's job is to manage and guide what occurs prior to and immediately following each period of silence so that the processing that needs to occur is completed.

Eight Categories of Periods of Silence. The eight categories are named either according to the place they occur or by the primary function they perform during conversations and discussions. These categories are subsumed by the overarching concept of think-time.

(1) Post-Teacher Question Wait-Time. The typical teacher pauses, on the average, between 0.7 and 1.4 seconds after his/her questions before continuing to talk or permitting a student to respond. When teachers perceive a student as being slow or unable to answer, this period of time is frequently less than .7 seconds. Post-teacher question wait-time occurs when a period of 3 or more seconds of uninterrupted silence follows a teacher's question, so that students have sufficient uninterrupted time to first consider and then respond to the query. To be most effective, this period of silence should follow a clear, well-structured question with the cues students need to construct adequate answers. Conversely, extended periods of silence following imprecise questions tend to increase the confusion, heighten the frustration, and lead to no response at all.

(2) Within-Student's Response Pause-Time. Within-student's response pause-time occurs as a student pauses or hesitates during a previously started response or explanation for up to or more than 3 seconds of uninterrupted silence, before continuing his/her answer. By definition, no one except the student making the initial statement can interrupt this period of silence. The student may or may not need or take the full 3 seconds, or he/she may need more than 3 seconds; it is up to the student to make this decision. Having an opportunity for sufficient time to finish their previously started answers is an uncommon occurrence for students. The widespread practice is for teachers to interrupt or cut students off from completing their responses, especially when the pauses are beyond .5 seconds. Students often follow these periods of silence by volunteering, without teacher prompts, information that is usually sought by the teacher.

(3) Post-Student's Response Wait-Time. This 3 or more seconds of uninterrupted silence occurs after a student has completed a response and while other students are considering volunteering their reactions, comments, or answers. This period

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allows other students time to think about what has been said and to decide whether they want to say something of their own. If students are to interact with one another during academic discussions, they must be given the time needed to consider one anothers' responses so that they can have dialogue among themselves.

(4) Student Pause-Time. Student pause-time occurs when students pause or hesitate during a self-initiated question, comment, or statement for 3 or more seconds of uninterrupted silence before finishing their self-initiated statements. By definition, no one except the student making the initial statement can interrupt this period of silence. The student may or may not need or take the full 3 seconds or may need more than 3 seconds. It is up to the student to make this decision.

(5) Teacher Pause-Time. Teacher pause-time, which occurs at a variety of places during a class period, is characterized by a 3 or more second period of uninterrupted silence that teachers deliberately take to consider what just took place, what the present situation is, and what their next statements or behaviors could and should be. One example of when the 3 seconds or longer of reflective thought would be beneficial for the teacher—and eventually students—is after a student has asked a question that requires more than an immediate, short recall answer. Other examples are when students have asked for further clarifications, clearer explanations, or better examples than those already provided.

(6) Within-Teacher Presentation Pause-Time. Within-teacher presentation pause-time occurs during lecture presentations or other extended information input periods, when teachers deliberately stop the flow of information and give students 3 or more seconds of uninterrupted silence to process the just-presented information. These pauses allow students time to consolidate their thinking, with no request of them to follow with a public response. In effect, this period of silence provides students uninterrupted time to momentarily consider the information of the teacher's presentation in smaller, "bite-sized" chunks, rather than all at once.

(7) Student Task-Completion Work-Time. Student task-completion work-time occurs when a period of 3-5 seconds; several (e.g. 15, 20, 30, or 90) seconds; or 2 or more minutes of uninterrupted silence is provided for students to remain on-task. This period allows students to complete a short or lengthy academic task that demands their undivided attention. Each period of uninterrupted silence should be appropriate to the length of time students need to complete the particular task.

(8) Impact Pause-Time. Impact pause-time occurs when the most dramatic way to focus attention at a given time is to provide a period of uninterrupted silence. Impact pause-time may continue for less than 3 seconds or far longer periods, up through several minutes, depending upon the time needed for targeted cognitive or affective impacts. One example of a desired result is creation of a particular mood or affective environment, such as when sudden silence may generate a feeling or mood of anticipation, expectation, drama, suspense, or uncertainty. Another example is providing time for students to consider and internally respond to a rhetorical question before continuing with additional information or activity.

Skillful Use of Think-Time. The 3 second period of uninterrupted silence is a minimal amount of time unless the teacher has sound reasons to reduce this time. There are few instructionally sound reasons for not allowing at least 3 seconds of silence. The teacher should deliberately and consistently wait in silence for 3-5 seconds or longer at particular times, described above. Further, the teacher should ensure that all students also preserve the disturbance-free silence so that both the students and teacher can consider and process relevant information and then act accordingly. When these behaviors occur, the teacher can claim to be skilled at using think-time. The skillful use of think-time contributes significantly to improved teaching and learning in the classroom.

References and ERIC Resources

The following list of resources includes references used to prepare this Digest. The items followed by an ED number are available in microfiche and/or paper copies from the ERIC Document Reproduction Service (EDRS). For information about prices, contact EDRS, 7420 Fullerton Road, Suite 110, Springfield, Virginia 22153-2842; telephone numbers are (703) 440-1440 and (800) 443-3742. Entries followed by an EJ number, annotated monthly in CURRENT INDEX TO JOURNALS IN EDUCATION (CIJE), are not available through EDRS. However, they can be located in the journal section of most larger libraries by using the bibliographic information provided, requested through Interlibrary Loan, or ordered from the UMI reprint service.

Atwood, Virginia A., and William W. Wilen. "Wait Time and Effective Social Studies Instruction: What Can Research in Science Education Tell Us?" SOCIAL EDUCATION 55 (March 1991): 179-81. EJ 430 537.

Casteel, J. Doyle, and Robert J. Stahl. THE SOCIAL SCIENCE OBSERVATION RECORD (SSOR): THEORETICAL CONSTRUCT AND PILOT STUDIES. Gainesville, FL: P.K. Yonge Laboratory School, 1973. ED 101 002.

Rowe, Mary Budd. "Wait Time: Slowing Down May Be a Way of Speeding Up." AMERICAN EDUCATOR 11 (Spring 1987): 38-43, 47. EJ 351 827.

Rowe, Mary Budd. WAIT-TIME AND REWARDS AS INSTRUCTIONAL VARIABLES, THEIR INFLUENCE IN LANGUAGE, LOGIC, AND FATE CONTROL. Paper presented at the National Association for Research in Science Teaching, Chicago, IL, 1972. ED 061 103.

Spohn, Betty Bowling. DO WHAT??? (USING SPECIFIC QUESTIONING TECHNIQUES TO GET SPECIFIC RESULTS IN TRAINING). Paper presented at the Conference of the National Society for Performance and Instruction, San Francisco, CA, 1986. ED 275 311.

Stahl, Robert J. USING "THINK-TIME" BEHAVIORS TO PROMOTE STUDENTS' INFORMATION PROCESSING, LEARNING, AND ON-TASK PARTICIPATION. AN INSTRUCTIONAL MODULE. Tempe, AZ: Arizona State University, 1990.

Tobin, Kenneth. "The Role of Wait Time in Higher Cognitive Level Learning." REVIEW OF EDUCATIONAL RESEARCH 57 (Spring 1987): 69-95. EJ 371 356.

Wilen, William W., ed. QUESTIONS, QUESTIONING TECHNIQUES, AND EFFECTIVE TEACHING. Washington, DC: National Education Association, 1987. ED 310 102.

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